



At Berth Vessel (Shore Power) Regulation

**Shore Power Workgroup
Meeting**

February 22, 2008

California Environmental Protection Agency



Air Resources Board

1

Questions Via E-mail

auditorium@calepa.ca.gov

2

Revisions to Regulation

- ♦ Vessel in-use operational requirements
- ♦ Emergency events
- ♦ Violations
- ♦ Fleets affected by the regulation

3

Vessel In-Use Operational Requirements

- ♦ Original proposal has three compliance options
- ♦ Revision: two compliance options
 - Reduced onboard power option
 - Equivalent emission reduction option

4

Reduced Onboard Power Option

- ♦ Revised requirements
 - Two major requirements for each milestone year
 - Percentage of visits satisfying limited operation
 - Reduction in auxiliary engine operation
 - Schedule revised to add 2017 interim requirement

5

Equivalent Emission Reduction Option

- ♦ Revised requirements
 - One schedule

Date	Fleet-Wide Emission Reduction
January 1,2010	10%
January 1,2012	25%
January 1,2014	50%
January 1,2017	70%
January 1,2020	80%

6

Equivalent Emission Reduction Option (Continued)

- ♦ Revised requirements
 - 2010 and 2012 standard based on annual compliance
 - 2014, 2017, and 2020 standard based on quarterly compliance
 - Early or “surplus” reductions exceeding requirements can be used toward complying with later year requirements (except 2014 and 2020)

7

Equivalent Emission Reduction Option (Continued)

- ♦ Revised requirements
 - Fleets switching from Reduced Onboard Power Option to Equivalent Emission Reduction Option must be able to comply with applicable requirements of Equivalent Emission Reduction Option at the time of change

8

Emergency Events

- ◆ Original proposal
 - applies only to visits criteria (e.g., 50 percent of visits must satisfy requirements for limited operation) for reduced onboard power option
- ◆ Revisions
 - Exclude visits meeting emergency event definition from compliance determination

9

Emergency Events (Continued)

- ◆ Reduced onboard power option
 - Visit counts
 - Power load for visit not counted toward fleet baseline power load
- ◆ Equivalent emission reduction option
 - Emissions for visit not counted toward fleet baseline emissions

10

Violations

- ♦ Original proposal

- Violations for not satisfying fleet requirement not clearly identified
- Health and Safety Code set fine amounts for specific violations
- Without clarification, potential fine for noncompliant quarter could be \$2,250,000 or more

- ♦ Proposed revision

- Identify violation and applicable formula for determining violations
- Provide range of potential fines based on level of compliance

11

Violations (Continued)

- ♦ Violation cases

- Not satisfy power reduction (reduced onboard power)
- Not satisfy visit criteria (reduced onboard power)
- Not satisfy both power reduction and visit criteria (reduced onboard power)
- Not satisfy emission reduction criteria (equivalent emission reduction option)
- Ship equipped with shore power equipment not use shore power at all available terminals visited

12

Violations (Continued)

- ◆ Formulas

- Based on MW-hr shortfall or emission shortfall
- Designed to provide appropriate disincentive for noncompliance

13

Violations (Continued)

- ◆ Formulas

MW-Hr shortfall / 1.8

- ◆ Fleet profile

- Company operates four 3000-TEU container ships that made 40 trips to port A
- For a quarter, the fleet makes 10 visits and uses 700 MW-hr

14

Violations -- Example

- ♦ Fleet is 5 percent short of satisfying 50 percent reduction in auxiliary engine operation

$$\text{Shortfall} = 700 \text{ MW-Hr/quarter} * 50 \% * 5 \% \text{ shortfall}$$

$$= 17.5 \text{ MW-Hr shortfall}$$

$$\text{Violations} = 17.5 / 1.8 = 9.7$$

$$\text{Potential fine} = \$1,000 \text{ per violation} * 9.7$$

$$= \$9,700$$

15

Potential Fine for Missing One Visit

Ship Type	Size	Hours at port per visit	Potential Fine
Container	2000 to 8000 TEU	10 to 100	\$9,000 to \$200,000
Passenger	7MW to 12 MW	10	\$40,000 to \$80,000

16

Fleets Criteria

- ◆ Board directed staff to consider statewide fleet applicability instead of port specific fleet applicability, with consideration of cost effectiveness
- ◆ Reviewing incremental cost effectiveness for newly affected fleets
 - Most cases, not consider shore-side cost

17

Contacts

- ◆ **Mike Waugh, Manager**
Project Assistance Section
e-mail: mwaugh@arb.ca.gov
phone: 916.445.6018
- ◆ **Grant Chin (Staff)**
e-mail: gchin@arb.ca.gov
phone: 916.327.5602
- ◆ **Webpage:**
Shore Power:
www.arb.ca.gov/ports/shorepower/shorepower.htm



18